

REMARKS

Upon entry of the instant amendment, claims 1-6 and 8-9 will remain pending in the above-identified application and stand ready for further action on the merits.

In this Amendment, claims 6 and 8-9 have been amended, and claim 7 has been canceled. The amendment to claims 6 and 8-9 does not introduce new matter into the application as originally filed, since it simply provides proper antecedent basis for certain terms recited in the claims. The amendment to claims 6 and 8-9 moreover helps to clearly and distinctly set forth the present inventive discovery. As such, entry of the instant amendment and favorable action on the merits is earnestly solicited at present.

Obviousness-Type Double Patenting Rejection

Claims 7-8 have been rejected on the ground of nonstatutory obviousness-type double patenting over claim 1 of US Patent No. 7,074,947. Reconsideration and withdraw of this rejection is respectfully requested based on the following considerations.

First, claim 7 is cancelled herein, so that the rejection thereof is now rendered moot.

Second, the invention recited in instant claim 8 is directed to a process for producing a β -hydroxyhydroperoxide compound or a carbonyl compound. On the other hand, claim 1 of US Patent No. 7,074,947 is directed to a process for producing an epoxide compound. Notably, a β -hydroxyhydroperoxide compound and a carbonyl compound are not an epoxide compound. Further, US Patent No. 7,074,947 does not teach or suggest a process for producing a β -hydroxyhydroperoxide compound or a carbonyl compound.

Therefore, the Applicants submit that instantly amended Claim 8 of the present invention and claim 1 of US Patent No. 7,074,947 are patentably distinct from each other, so that withdraw of the outstanding obviousness-type double patenting rejection is required at present.

Claim Rejections - 35 USC § 112 (Second Paragraph)

Claims 6 and 8-9 have been rejected under the provisions of 35 USC § 112, second paragraph. Reconsideration and withdraw of the rejections are respectfully. In particular, it is noted that in instantly amended claims 6 and 8-9 proper antecedent basis occurs for each term recited therēin.

Claim Rejection - 35 USC § 102(b)

Claims 1-6 have been rejected under the provisions of 35 USC § 102(b) as being anticipated by **Hancock US '032** (US 5,367,032). Reconsideration and withdraw of this rejection is respectfully requested based on the following considerations.

Legal Standard for Determining Anticipation

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.” *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir.

1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Distinctions over the Cited Art

The USPTO has noted that **Hancock US '032** teaches a carbonyl-containing compound formed by reacting a compound containing at least tungsten or molybdenum, an amine such as triamine, hydrogen peroxide, and a phosphorus acid or a species convertible to a phosphorus acid.

However, **Hancock US '032** does not teach a carbonyl-containing compound formed by reacting a compound containing at least tungsten or molybdenum, an amine such as triamine, hydrogen peroxide, and a phosphorus acid or a species convertible to a phosphorus acid. Instead, **Hancock US '032** teaches a carbonyl-containing compound formed by reacting a compound containing at least tungsten or molybdenum, an onium compound, hydrogen peroxide, and a phosphorus acid or a species convertible to a phosphorus acid.

The component (B) of the present invention is at least one compound selected from tertiary amine compounds, tertiary amine oxide compounds, nitrogen-containing aromatic compounds and nitrogen-containing aromatic N-oxide compounds, and they are quite different from an onium compound.

Alternatively, although **Hancock US '032** also teaches that the reaction of a carbonyl-containing compound with an amine reactant at col. 6, line 65 to col. 7, line 14, **Hancock US '032** discloses the amine reactant contains a reactive hydrogen atom.

Carbonyl group-containing polyisobutenes produced by the process as aforesaid may be further reacted to produce materials useful as internal combustion engine fuels additives. Typically, they may be reacted with amines, in the presence or absence of formaldehyde, to produce nitrogen-containing materials.

The amine reactant useful in the production of additives may be any amine containing a reactive hydrogen atom. Preferred amines include the alkylene polyamines and the polyalkylene polyamines, for example diethylene triamine, triethylene tetramine, tetraethylene pentamine, dipropylene triamine and the like, dimethylamino propylamine (DMAPA) and polyalkoxyamines and aminoalkylalkanolamines, for example the commercially available Jeffamines (RTM). A suitable process for preparing an additive is described in for example US-A-3,931,024. (See Hancock US 5,367,032, Col. 6, line 65 to Col. 7, line 14 (Emphasis Added)).

On the other hand, the component (B) of the present invention has no reactive hydrogen atom.

Accordingly, Applicants submit that instant claims 1-6 are not anticipated by Hancock US '032 under 35 U.S.C. §102(b), since Hancock US '032 does not teach or provide for each of the limitations recited in pending independent claim 1, or the claims that depend thereon.

Claim Rejection - 35 U.S.C. § 103(a)

Claims 1-4 and 6-9 have been rejected under the provisions of 35 USC § 103(a) as being obvious over claims Steinmetz US '875 (US 3,119,875). Reconsideration and withdraw of this rejection is respectfully requested based on the following considerations.

Legal Standard for Determining Prima Facie Obviousness

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to

combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.).

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the

nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The Supreme Court of the United States has recently held that the teaching, suggestion, motivation test is a valid test for obviousness, but one which cannot be too rigidly applied. See *KSR Int'l Co. v Teleflex Inc.*, 127 S.Ct 1727, 82 USPQ2d 1385 (U.S. 2007). The Supreme Court in *KSR Int'l Co. v. Teleflex, Inc.*, *ibid.*, reaffirmed the Graham factors in the determination of obviousness under 35 U.S.C. § 103(a). The four factual inquiries under Graham are:

- (a) determining the scope and contents of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating evidence of secondary consideration.

Graham v. John Deere, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (U.S. 1966).

The Court in *KSR Int'l Co. v. Teleflex, Inc.*, *supra*, did not totally reject the use of "teaching, suggestion, or motivation" as a factor in the obviousness analysis. Rather, the Court recognized that a showing of "teaching, suggestion, or motivation" to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a).

Even so, the Court in *KSR Int'l Co. v. Teleflex, Inc., ibid.*, rejected a rigid application of the "teaching, suggestion, or motivation" (TSM) test, which required a showing of some teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the prior art elements in the manner claimed in the application or patent before holding the claimed subject matter to be obvious.

Accordingly, while the courts have adopted a more flexible teaching, suggestion, motivation (TSM) test in connection with the obviousness standard based on the *KSR v. Teleflex* case, which case involved a mechanical device in a relatively predictable technological area, it remains true that, despite this altered standard, the courts recognize inventors face additional barriers in relatively unpredictable technological areas as noted in *Takeda Chemical Industries, Ltd. v. Alphapharm Pty., Ltd.*, 83 USPQ2d 1169 (Fed. Cir. 2007).

Further, the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336, quoted with approval in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

Exemplary rationales are set forth in MPEP § 2141 that may support a conclusion of obviousness, and include:

(a) combining prior art elements according to known methods to yield predictable results;

- (b) simple substitution of one known element for another to obtain predictable results;
- (c) use of known technique to improve similar devices (methods, or products) in the same way;
- (d) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (e) "obvious to try" – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success
- (f) known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;
- (g) some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Additionally, MPEP § 2143.03 clearly directs that all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness.

Distinctions over the Cited Art

Steinmetz US '875 teaches the production of an aldehyde or ketone from the reaction of a catalyst solution comprising molybdenum and other transition metals, an oxygen compound of nitrogen and a mineral acid in the presence of an olefin in a pH range of 0 to 5.

Further, **Steinmetz US '875** teaches nitrogen dioxide and nitrogen pentoxide or mixtures of nitrogen oxides containing the same as an oxygen compound of nitrogen at col. 5, lines 6 to 8 thereof.

...oxygen compounds of nitrogen, such as nitrogen dioxide, and nitrogen pentoxide or mixtures of nitrogen oxides, containing the same. (See Steinmetz US 3,119,875, Col. 5, lines 6-8).

In contrast, the component (B) of the present invention is different from an oxygen compound of nitrogen as disclosed in **Steinmetz US '875**. As such, **Steinmetz US '875** does not teach or suggest the component (B) of the present invention.

Therefore, Applicants believe that claims 1-4 and 6-9 are patentable over the disclosure of **Steinmetz US '875** under 35 U.S.C. §103(a). In this respect, no reason or rationale is provided in the cited art, or in the record of this application, when taken as a whole, that would allow one of ordinary skill in the art to arrive at the instant invention as claimed.

Accordingly, withdraw of the outstanding rejection under 35 USC § 103(a) is required at present.

Any contentions of the USPTO to the contrary must be reconsidered at present.

Conclusion

Based on the amendments and remarks presented herein, the USPTO is respectfully requested to issue a Notice of Allowance clearly indicating that each of instantly pending claims 1-6 and 8-9 are patentable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application; the Examiner is respectfully requested to contact John W. Bailey, Reg. No. 32,881 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

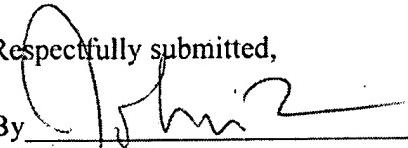
Application No. 10/552,664
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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 

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